

ORAL HISTORY OF THE TENNESSEE VALLEY AUTHORITY

INTERVIEW WITH

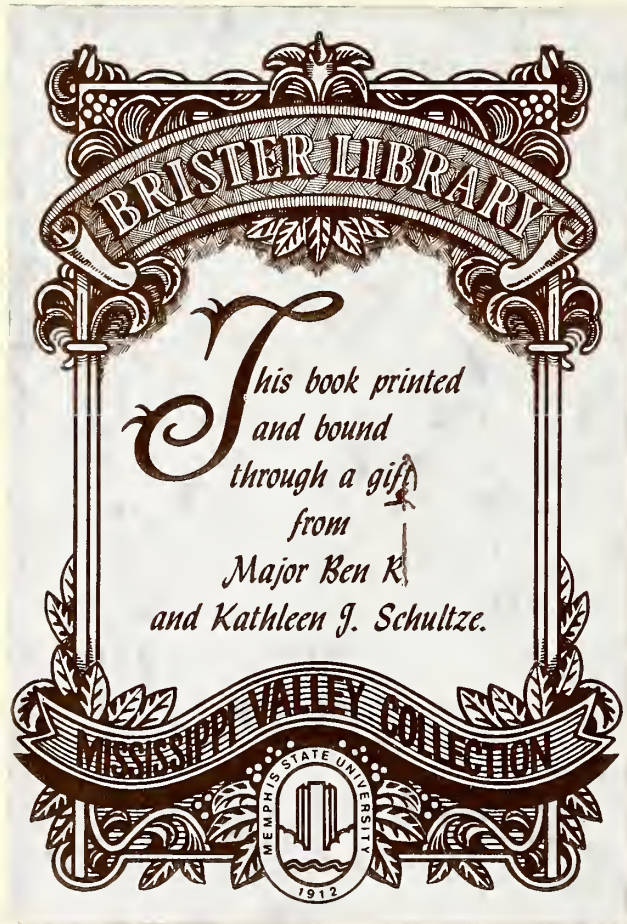
WILLIAM N. CALVERT, JR.

BY - CHARLES W. CRAWFORD

TRANSCRIBER - BRENDA P. MEIER

ORAL HISTORY RESEARCH OFFICE

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ORAL HISTORY OF THE TENNESSEE VALLEY AUTHORITY

INTERVIEWS WITH WILLIAM N. CALVERT, JR.

DECEMBER 17, 1971

BY CHARLES W. CRAWFORD

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PLACE: Knoxville, Tenn.

DATE: December 17, 1971

W. N. Calvert Jr.
(Interviewee) (MR. William N. Calvert)

Charles W. Crawford
(For the Mississippi Valley Archives
of the John Willard Brister Library
of Memphis State University)

THIS IS THE ORAL HISTORY RESEARCH OFFICE OF MEMPHIS STATE UNIVERSITY. THIS PROJECT IS "AN ORAL HISTORY OF THE TENNESSEE VALLEY AUTHORITY." THE PLACE IS KNOXVILLE, TENNESSEE. THE DATE IS DECEMBER 17, 1971, AND THE INTERVIEW IS WITH MR. WILLIAM N. CALVERT, JR., FORMERLY WITH THE TENNESSEE VALLEY AUTHORITY. THE INTERVIEW IS BY DR. CHARLES W. CRAWFORD, DIRECTOR OF THE MEMPHIS STATE UNIVERSITY ORAL HISTORY RESEARCH OFFICE, AND WAS TRANSCRIBED BY MRS. BRENDA P. MEIER.

CRAWFORD Mr. Calvert, I suggest we start with some background. We might start with when and where you were born, something about your family, your early life, education and experience before TVA. Then we'll work our way through your TVA experience.

CALVERT I was born in Culleoka, Tennessee. It's a little village about ten miles south of Columbia, in Maury County, on September 9, 1906. My mother was Josephine Lamar; my father was William N. Calvert; I'm William N. Calvert, Jr. I attended local high school at Culleoka, entered the university in September of 1924, the University of Tennessee. And in 1926 the university started what is now the rather famous cooperative engineering program, and I happened to be the first person signed up in that coop program. I worked four years in the engineering department of Southern Railway as a coop student, working three months, or one quarter, and then going to school one quarter. I graduated in 1930 (B.S. in Civil Engineering) and immediately went to work with the Interstate Commerce Commission in

Washington on evaluation of railroads. Some vacation time I also worked with the Tennessee Highway Department before I graduated, in a traffic study by which Dean Dougherty at the university was making the route plans for what we have called now the primary system of state highways in Tennessee. I worked some with him in assembling data all over the state for that project.

In the Depression days I was up East in Washington and Baltimore and Philadelphia. It was a scared country in a scared time. I felt I was going to be let off, or furloughed due to lack of funds, and when the talk of TVA started, I would go over to the Capitol and listen to the debates on the TVA program. Even before the Act was signed by President Roosevelt, I was endeavoring to get on with TVA. I had friends in the engineering organizations under the Bureau of Reclamation, Department of Interior, and in the U.S. Corps of Engineers, and if you will read the Act quickly you would imply that one or the other or them was going to do all the engineering for TVA, so I started working very hard with both of those organizations to get a job with TVA--partly because it seemed to be a very, very interesting project for an engineer, particularly a Tennessee native. Also, in the times up in the East I was interested in getting a little closer to my father's dining room table.

I happened to know General Neyland, so I wrote him a letter and he wrote me that I should contact Dean Dougherty, and I also knew Dr. Harcourt Morgan. When he was appointed I started contacting him, and ultimately got a job. I started work July 14, 1933. The first engineering field work that was done was a study (called a transportation study) to determine access to Norris Dam. That was under the general

supervision of Dean Dougherty, and we started out to find routes of access both by rail and by highway to Norris Dam.

The best maps available were the maps like you'd get at a gas station, and they weren't near as good as they are now, so you had to do a lot of field survey work just to find out what the possibilities were. There were no roads to Norris Dam, and we made these studies for alternate routes of highways together with the estimated cost and also for a railroad.

The Corps of Engineers had completed plans and were ready to advertise for construction for a railroad to Norris Dam, but early in the TVA program someone came up with a very good idea that why build every expensive railroad to Norris Dam that would have practically no use after the dam was built? Why not build a highway that would help open that country and would also be of much value to the area after the dam was completed, after the need for personnel equipment and materials access had ceased? The report and studies were made by Dean Dougherty and of course reported to the board, and they decided to build a highway from Knoxville across the top of the Norris Dam and to connect with the railroad and U.S. Highway 25 W at Lake City. In the records that will be Cove Creek; they changed the name sometime back in there. So after that decision was made, by then TVA was getting more engineering organization and more people and rented offices in Knoxville, and in the fall of 1933 we started work on construction drawings to build this highway which now they call Norris Freeway.

Some perhaps interesting sidelights on that. After the decision to build the highway came, they wanted to start immediately. Well, all we had were these preliminary, very rough surveys to study

the general plan of the routing of the highway, and of course, that was of little or no value when it came to be making plans that a contractor could bid on and use to build the highway. So on the basis of some other surveys--we made some aerial surveys about then, which were some of the first that had ever been made for that purpose--we got up a set of drawings that were semi-schematic, diagrammatic, and stated in the contract that they were preliminary drawings, and would serve to award a contract, and as soon as the contract was awarded, we would make the final drawings for the detail design for paying detail quantities, and that sort of thing. And that contract was let, as I recall, somewhere around Thanksgiving, 1933, and the contractors moved in.

By then I was in the office in the Sprinkle Building, and field parties would survey in the daytime. We'd work out drawings at night, and have them printed. A blueprint shop here in Knoxville was organized, a private organization, and agreed to stay open all night so that we could get these drawings into blueprints and get them out to the field the next morning. We started that way in the wintertime. We thought, well, we wouldn't have any trouble keeping ahead of them, but that was one of the most favorable construction winters, I guess, in the modern history of this part of the country, because we worked 16 or 18 hours a day, seven days a week. From the day that contract was let, I believe 59 days later, they carried some heavy equipment over the road, half paved, from the railhead at Lake City to Norris Dam, which normally you would expect very, very little work done where you had heavy grading to do in the wintertime, but we worked that kind of hours, because construction work never had to stop due to weather.

I don't know whether you are interested in some of the semi-

amusing sidelights, but I was a fan, a Tennessee football enthusiast, and having been away for three or four years, I immediately bought season tickets, along with two or three of the other fellows, to the football games. When the first football game came up the people were quite concerned that we weren't going to get off on Saturday afternoon. We had just assumed that you wouldn't work Saturday afternoon, and the solution to it was this: that anybody who got off Saturday afternoon to go to the football game--get off about 1:30, had to come in at 8:00 Sunday morning. Those that worked Saturday afternoon could go to church on Sunday morning and come in at noon. And we saw the sun come up a lot of mornings.

Another interesting sidelight, maybe of the times as compared to today when most young people are thinking of security: I had gotten acquainted with a coed at the university and we were figuring on getting married for the last year or two there of the Depression, but things were so scary I was unwilling to take that step and maybe be out of a job. So when we got started that fall, I asked if it were going to last ninety days, I was going to get married. Well, they wouldn't promise me that I had a job for ninety days, so I got married anyhow in October of '33 and so far managed to last out that temporary, ninety-day job, until I retired May 31, 1971.

When I retired I had the longest period of service in TVA of any TVA employee. I would tell that story to young people over the years who would come in to interview me about the permanence of a job with TVA; that I think it's turned out to be that it's going to be a pretty permanent job. The enthusiasm is something that you would have to be a part of to appreciate this day and time. That's no reflection on the young people today. I think they're fine, but there was no complaint,

not one word ever uttered of working seven days a week, 15, sometimes 18, hours a day. The teamwork was just amazing. There were no squabbles between the various units that were working. Everybody was enthused about the project, the idea, and wanted to get on with the work. And the cooperation was just almost beyond belief of the fact that at least in the unit where my job required coordination that there were no prima donnas--everybody was working. We weren't sure just the direction we always should take, but you would sit down, discuss the problem and arrive at a solution. There was no criticism if you went the wrong way, because we were starting into something new, with few guide lines.

This highway, which is now called the Norris Freeway, was bought with a controlled right-of-way to avoid the billboard problem and to provide scenic protection that we hear so much now about. This right-of-way was bought as a minimum of 125 feet on each side of the road--bought in fee. In fact, it took an act of the legislature in order to have that kind of a right-of-way for a road in Tennessee. The conventional right-of-way always before, up to that time and for a long time thereafter, was an easement. You bought the right to build, construct and operate a highway over a limited strip of land with no control, no restrictions whatever on the use of the abutting property. That road, though, had a controlled right-of-way, it was wide. You couldn't put signs; you couldn't put entrances except at safe places and that sort of thing. It hasn't been carried out over the years 100 percent in that legal restriction, but it still was one of the forerunners in the whole country on the controlled access which is used today on the interstate

highways, and many other arterial roads have the access control.

Well, that was an attempt in those days to develop a road of that nature, both for safety and for scenic beauty. After the construction of the access highway (Norris Freeway), of course, the big problem in the reservoir, as far as the roads were concerned, were the highways and railroads would be destroyed or affected by the Norris Reservoir. And the man, James Bradner, who was in charge of the unit that was building the access roads and developing the town of Norris, left about that time to become city manager of the town of Norris; and Frank M. Webster, who was the commissioner of highways for the state of Tennessee, came to TVA as head highway engineer to set up the program for the relocation of many, many miles of highways in the reservoir, whose relocation was necessitated by the flooding of the existing roads, and he became my boss in about maybe '34 or '35--somewhere in there-- and then we undertook the problem of relocating the roads and the railroads in the reservoir area. The idea was developed that we would make a contract with the state and the counties and so forth, and reach a mutual agreement as to what roads would be rebuilt. The character or standards of these roads, their locations, all about it, was spelled out in contracts with the state and counties on a basis to be fair to them and also fair to TVA, and that policy has been followed on down through the years on the adjustments of the transportation facilities in the reservoirs. Do you have any questions that you would want to ask me to direct this interview?

CRAWFORD Yes, sir. Let's check back over a few things and then I'll let you go ahead, because you're doing extremely well in the direction we're going. I'd like to ask a little more about the Norris

Freeway. I believe that was something new, at least for Tennessee. How much background was there for it? Where were the ideas developed? Who did them, and so forth?

CALVERT It was new. There were some roads or highways in the East that had been built that way. I think the Westchester Parkway, Westchester, New York--Chester County, I guess it is, near New York City--had been developed and the highway from Washington D.C. out to Mount Vernon was designed in a similar way. In fact, I had a close friend who was working on it when I was in Washington--I was out on the busman's holiday on the construction on the weekends sometimes with him. They were not entirely analogous, though, to the road we were building here. The road from Washington to Mount Vernon, of course, had tremendous historic interest in the whole area, also the volume of traffic. Of course on the Merit Parkway and the Westchester roads there near New York City the traffic was such that it almost made it necessary to have some kind of innovation in a highway, and when they did decide to build the road, take care of the traffic, they did take into account the aesthetic values much more than had been thought of in the highway building program in this part of the country.

 The basic idea up until about that time, and actually for a number of years thereafter, was that they had a limited amount of funds to build roads--the states did. The thing you ought to do was to build as cheap as you could, which was minimized right-of-way costs, so buy it narrow, but no restrictions on the abutting property's use of that road, and make the cut slopes as steep as they would stand, and the same thing for the fill slopes. Of course, that led to the bare scars that weren't susceptible to revegetation, and it wasn't very nice looking, but it served the purpose as far as moving people from here to there. But just

who in the board, or top TVA, said that this road was going to be laid out to be a very pretty road and was going to be modeled after some of these highways that had been built with high regard to aesthetics (I don't know who made that decision--presumably the board), but when we started on it, even in the preliminary stages of it, why that was what this road was going to be. Mr. J. W. Bradner, who was in charge of design and construction of the Norris Freeway, had had similar responsibility on some of this kind of road up East.

Dr. Arthur Morgan told us for these twenty miles of it that we had to build it for a million dollars, which is one thing that led to...If you drive over it now, as to some of the curves, it was, of course, a more pleasing road from the aesthetic standpoint not to have big cuts and fills. And of course, the cost of a road is very closely related to the heavy cut and the heavy fills that you have, so we had to fit it to the ground, which is what is being tried today, incidentally, on roads. But who said that this road had to be that way, I don't know. All that we were told right at the beginning is that was the kind of road we had to design, and when we started on the detailed design of it--the working drawings--why, we gave much attention to fitting the road to the terrain and using slopes that would be easily susceptible to revegetation, to avoid erosion and the expense of cleaning ditches and cleaning out culverts and that sort of thing. Of course, on many roads later, we didn't carry it to that extreme. On the many thousands of miles that we have built, that has been one of the primary considerations, on any road that was developed or built by TVA, to minimize the damage to the abutting vegetation, and to particularly avoid the siltation and erosion problems that came from bare excavation.

CRAWFORD Thank you, Dr. Calvert. I'll let you go ahead now with your work after the Norris Reservoir.

CALVERT Well, the reservoirs came quickly after that. We hadn't gotten through one until we'd get another one or two, and the theory in this relocation of the county and the state roads were equivalent replacement. In other words, that meant that we destroyed a system of roads in a county or in the state. You couldn't put them back, per se, just exactly where they were and like they were. It would be a very uneconomic and undesirable plan for the permanent locations of the new roads. For instance, a road that went up through a large body of water, even if you thought you could bear the cost of building it out there, would serve very little useful purpose, because it would be serving lands that were now all water while they, prior to impoundment, were serving bottom lands or areas that, due to the people or the use of the lands, had been important roads, but after those lands were flooded and were bought out, there was no need for that road to be there. That was one thing that was sort of hard to get over in talking to particularly the county officials that we were dealing with (their not being engineers. Maps weren't available like they are now. Nearly everybody now has a topographic map, but then it was hard for them to get a picture of what the difference was going to be and why we didn't replace this road or that road--this one was abandoned and not replaced because it would serve no useful purpose if you had it, but the people we had to deal with were most cooperative.

They put a lot of trust in the TVA engineers, that we knew the right thing. A great deal of the credit should go to Frank Webster, who headed it up. He had a tremendous following of people that believed that

he was strictly honest and fair. There was no slick dealing; that what he said that they ought to have was probably the best thing for them. He had, incidentally, the sharpest line between what was right and what was wrong of any person I ever saw. There was no gray with Mr. Webster. It was either right or wrong, and he would, in no case, try to get rid of building a road if he thought that after this project was completed, in any reservoir project, that that road should be there for the need of the county, for the need of the people in it. Upon completion of the state roads and the county roads, the rights-of-way were deeded back to the county or state, and the state or county became 100 percent responsible for the road, just like any other county or state road. The state highways all over the Valley, almost without exception, were obsolete to some extent and were not roads that would be good for the next few years, let alone as long as you would think a road, when you build it, ought to suffice--ten or twenty years or more.

So in that idea of equivalent replacement, we would make an estimate of what it would cost to put this road back or an equivalent system of roads. Sometimes it's not road for road. You destroy the system of roads to such an extent that you have to build a new system, and the roads that we put up to the people--to the state--was an equivalent replacement based on a theory that we would put back a road or a system of roads that would serve the land and the people that were remaining after the reservoir equally as well as they were served by their road system prior to the reservoir. That meant, of course, if they had a road running down the river in the valley that's straight and level they needed to maintain, and we had to put it up on the side of the mountain,

so we'd make it a little wider and a little better pavement because it had to be maybe a little more curving or have little steeper grades, or it might be longer. And in some instances we would build one road that would be far superior to perhaps any other one road in that area, but on the equivalent replacement theory, that road might be carrying the traffic after the reservoir, where there were two or three roads that were to be abandoned due to the reservoir.

And with the state, we would make an estimate of that system and work out with them--we would reach a mutual agreement that this would be TVA's obligation, you might say, or limit of responsibility for road patterns, and this was an estimate cost which we would agree and they would agree to what that was. Then we'd work out, in almost every case--for each individual road as well as for the entire reservoir--what we and the state thought ought to be done for the foreseeable future with the roads. Well, that meant that the road had to be at a considerable higher standard--had to be wider, better pavement, had to be flatter grades, had to have less curves, and that sort of thing--looking toward the future. Then we would estimate what the cost of that system of the roads that we ought to have would be compared to the roads of an equivalent replacement. And that would, of course, leave the state owing sometimes a substantial amount of money. Sometimes it ran up into a couple million dollars or more. In some instances you could find in the record where they paid TVA money and we built the roads. In most cases, though, we traded that balance out by letting the state build, at its expense and its responsibility, some roads or portions of roads that were our responsibility, so that in the end we spent only what

our estimated obligation was, but we got the modern road--at least modern as far as we could see it at that time--built, and the states, of course, were interested in cooperating with TVA because they thought TVA was a good thing. They also realized that they were getting a highway, by modern standards at that particular time, for considerably less money than they would have to pay if the road were modernized, had there been no TVA or no reservoir. And they knew that the time was coming very soon that they were going to have to undertake to rebuild most of these roads and they would get their modern highway for less cost.

In other words, their participation to get a given road built to higher standards, with us putting in the funds for the equivalent replacement standards--they'd get this road for much less cost than they could have rebuilt it, had we not gotten into the picture. So that is the way we worked with all the states. There may be a few exceptions where no joint participation was involved. The records will show these contracts on every road--county and every state road--that was rebuilt, that right up to today there is a contract that states what each party will do and the standards of each road that is to be built.

The counties, in most cases, were unable to participate. They didn't have the money; there were some that did--some of the counties that had a little more funds like Hamilton and a few of them did participate in improving the standards of their roads. Particularly in the early days of settling this part of our country, the county roads sort of grew up like topsy, and you couldn't go in and build an engineering road without making it better than the one that was there.

And we didn't follow as strict equivalent replacement with

the counties as we did with the states. The county roads, of course, were much more affected. There were a lot more of them than there were state roads, and by combining the needs of three or four, or one or two existing county roads into one good road, we did get some improvement in the theory of equivalent replacement. The existing road was usually narrow, had poor drainage, and was more or less flat on the ground and would be easy to maintain. You could pull off on the edge of the field to pass on the narrow ones. When you built an engineering road, particularly where you got up into rougher country and had to make cuts and fills, if you were replacing a road that was twelve feet wide that was flat on the ground, if you put a twelve-foot road that had cuts and fills in it, it would actually be, as far as use is concerned, a much narrower road than the twelve-foot road that laid flat on the ground. So it was decided early in the game that it was an economic waste of public funds to build any public road that wasn't a two-way road. So many of the older roads were close to one way. You could find places to pull off--as I say, you could get out in the edge of the field or something to pass--and we didn't build any public roads less than two-way. Another thing in which we had been criticized was for not following the equivalent replacement on some roads; that we built them better. Well, we also considered--and the county people did too--the maintenance. When you have a road that is flat on the ground, it's much easier to maintain than one that has cuts and fills. Nearly all of them had to cross a part of the reservoir, and it would be almost impossible to widen the road if it later needed it, which could easily be foreseen--that this road had to be wider. It would be almost impossible to widen it where it went over 30, 40, or 50 feet of water. There would be riprap rocks on the sides,

and guard rail--it would be a nearly impossible undertaking. Certainly within the limits of the finances of the counties, it would have been impossible to widen these roads, so they were built a little wider than the flooded road, but it was at least our interpretation that that was an equivalent replacement, considering their maintenance, their future construction needs and their problems that they would be confronted with, as time went on, with the existing roads. I personally think that some of them were built to a little too low standards that we did at that time.

CRAWFORD Why do you feel that, Mr. Calvert? Do you feel the standards were too low for that time or too low in view of what you learned later?

CALVERT Well, what we learned later. These reservoirs brought in a lot more traffic--fishermen, if nothing else--than was on some of these roads, and, after all, the TVA idea was to improve the physical and human resources of this area. That's the main thing we were down here for--not to build a monumental engineering masterpiece--and certainly one of the primary keys to developing the economy of a region that needed it so badly as we did, particularly in the early days, is transportation.

And I think at that time, while we thought that we were doing what was right, I think that I could find some roads that were built in the Tennessee Valley that I think we were unwise in building to the modest standards that we used, because of the developments later in the terrain that these roads were in; it almost precludes development of them to the standards they need. And we have looked at that for the last ten or

fifteen years much more closely than perhaps we did at the first, but we were starting something new and the crystal ball was pretty murky that we were looking into as to what was going to happen in these areas. I think we have learned, and the current policies that we use still are based basically on equivalent replacement. Today we have taken a little bit more liberal view of that than we did at the time. The TVA Board, I think upon Mr. Webster's recommendation, back somewhere (I've got the minutes of the board when they decided--about '34 or '35 or '36) that we would follow a policy of equivalent replacement based on the interpretation of the Act.

That was all that TVA could do. We couldn't go in and build a super highway where there was a very minor road, just because we thought it would be good politics or good policy for the time, or to get along with people easier. And we tried to look at the dollar very carefully, very hard, and at the same time have a system of roads that would serve the foreseeable future.

Of course, we also had something in those times that highway organizations don't have, and that's private roads, which in the records of TVA would be shown as tertiary roads. They were called that for want of a better name. I don't know what that meant, but a tertiary road meant a very, very minor county road that might serve more than one person or more than one farm, or it was a road that served one individual. Of course, in building the reservoirs, you flooded out the access roads to a lot of homes and farms and timberlands and that sort of thing, and we had to negotiate with the individuals, of course, for that kind of road. We did build twelve and fourteen-foot roads for private individuals, but we didn't build very many public roads of that character.

CRAWFORD Did you build these roads you designated--tertiary roads--for farmers who needed new access?

CALVERT Yes, if we destroyed or damaged or impaired the access that a farmer or any land owner or resident had, we put it back. Of course, we had to. Otherwise he would be isolated. We built him a road.

CRAWFORD A gravel-surface road?

CALVERT Yes. I would expect you would find some, particularly in the last fifteen years, that are not gravel surface, because if a fellow had a paved driveway and we destroyed it, we had to put him back one that was paved. That was worked out with the individual. We worked up the proposals and of course when you went to buy land--our land branch in Chattanooga handled most of the dealings with the owner--but we furnished the information for the owner for his private road.

The railroads have been handled in a similar way; that we would go to a railroad company with a proposal for an adjustment or a relocation of one of its railroads and reach an agreement with them as to what our responsibility was in that, and in many cases the railroads contributed to the cost of building a better railroad. It was usually in the track work. We were obligated to put back, say, a 90-pound rail, and if they wanted a 130-pound rail, why you put the 130-pound there. So we didn't pay for the rail, we only paid for putting it on, so we've used the equivalent replacement with the railroads. Also, the railroad bridges have been essentially handled on what they called the Truman-Hobbs

Act, which I believe was 1941--an Act of Congress that set up the responsibilities of the government on these water resource projects on structures, which is still essentially equivalent replacement that the railroad has to pay for additions and betterment to the existing structure.

CRAWFORD Did you have much of this work with railroads?

CALVERT Yes, we have had a few hundred miles of railroad adjustment, particularly the Southern, L & N, N.C. & ST.L, which is now the L & N, and the Illinois Central. The Clinchfield is now the fully owned subsidiary of the L & N. We have had some adjustment with it, in upper East Tennessee, and little with the Norfolk and Western, but we approached them all on this same basic situation, that we'd sit down with them and tell them first, "What is the physical effect of our project going to have on your rail facility," and then we'd say, "This is what we propose," and usually didn't have too much trouble of reaching an agreement as to what our responsibility was. You can find all of that in our detailed contracts that spelled out the details of accounting and everything else--standards, quality, specifications--of any railroad that we've undertaken. Of course, we've had, particularly since the steam plant days, a lot of railroads of our own.

CRAWFORD What were they? Were they branch lines leading into the steam plants?

CALVERT Branch or spur lines that would lead into the steam plants. We had some to the dams, too. We had railroad facilities

at Watts Bar Dam, Fort Loudoun Dam. There were temporary railroad facilities at some other dams like Douglass, for instance, where the railroad was taken up after the dam construction was completed. Some of the dams have permanent rail access. Perhaps the most involved and one of the most interesting as far as the problem of working it out is over Kentucky Dam; there the Illinois Central main line crossed just below where the dam was to be built and was affected in major way with the bridges across the Tennessee River at that place. It was a tremendous undertaking from the cost standpoint particularly, so we finally decided to relocate the main line of the Illinois Central Railroad on top of Kentucky Dam. That's where it is today and to my knowledge, that's the only private railroad crossing of a major dam. I don't know of any others that have been done that way, by any other government agency.

CRAWFORD Did you have any objections to that decision?

CALVERT No, not particularly. Of course, with our people operating the dam, it took a lot of coordination and explanation, and with the railroad not having full control of its right of way for that mile there, they were quite concerned as to how arbitrary or autocratic TVA might get about their trains going over our dam, but it was worked out in a relatively short time and has turned out, as far as I know, very well. I haven't heard any complaints about it in many years as far as the theory of having the mainline railroad crossing the dam, and the dam is a bridge, in effect, to cross the Tennessee River and this railroad that is right on top of it.

CRAWFORD You made a great saving by avoiding another railroad bridge across the river at that point, didn't you?

CALVERT Oh, yes, it saved a few million dollars.

CRAWFORD Did your engineers object to it for any reason?

CALVERT Not that I know of. Now, the top people in the engineering organization were dealing with our people who had to operate that dam for power and flood control, and whether they had difficulties, I don't know. I wasn't in that at that time. This was in the late 30's. I wasn't in a position to sit in on all those meetings. I have for about the last thirty and have taken the lead in most of them, and I have never heard any of the power people complain about it since. We did have a little complaint a few years ago, which I went down there and we resolved it. The Illinois Central wasn't maintaining the road on top of the dam to the standard that our operating folks thought they should. They were afraid a train would derail and cause some trouble, but we went over it with the railroad people and they came in and did improve the maintenance. It was getting to where the trains would rock pretty bad as they went across it, and the reason was that the modern maintenance equipment--all this sophisticated maintenance equipment that they've got that operates on the railroad--compared to the old way of having fifty men in there with picks and tampers like they used to, and the distance for the passage of the new equipment between, the concrete barriers on each side of the railroad, was a little too narrow to operate this sophisticated equipment. They had just never gotten around to having time enough to go back to the old fashioned way, and put people in there to replace ties, improve drainage and change ballast and that sort of thing. That

work for many years has all been done mechanically, as I say, by this sophisticated equipment, and it wouldn't operate in there, but that's a minor problem and I'd say it's hardly worth mentioning in our relations with the railroads.

CRAWFORD How did the railroads solve that problem? Did they get more men?

CALVERT Yes. Responsible officials hadn't seen it; they had so many other places that needed attention on their line that they apparently hadn't seen it, and after they saw the condition of it, they readily agreed that major maintenance should be done. The railroad did a very good maintenance or rehabilitation job using mostly hand labor (that is, by the "old way"). Obviously no one in TVA or the railroad in the 1930s could conceive of the mechanical equipment that would be designed (invented) twenty or thirty years later to replace hand labor for replacing cross ties, cleaning, replacing and tamping ballast, driving spikes, etc. And of course they couldn't know that said new equipment could not operate on top of Kentucky Dam. The fact that the track on the dam was practically maintenance free for twenty-five years indicates that no special problem was imposed on the railroad even though maintenance of a mile of track requires hand labor occasionally at long intervals.



THIS IS THE ORAL HISTORY RESEARCH OFFICE OF MEMPHIS STATE UNIVERSITY. THIS PROJECT IS "AN ORAL HISTORY OF THE TENNESSEE VALLEY AUTHORITY." THE PLACE IS KNOXVILLE, TENNESSEE. THE DATE IS DECEMBER 17, 1971, AND THIS IS INTERVIEW NUMBER TWO WITH MR. WILLIAM N. CALVERT, JR. THE INTERVIEW IS BY DR. CHARLES W. CRAWFORD, DIRECTOR OF THE MEMPHIS STATE UNIVERSITY ORAL HISTORY RESEARCH OFFICE, AND WAS TRANSCRIBED BY MRS. BRENDA P. MEIER.

CRAWFORD Mr. Calvert, we'll begin where we were with your relations with railroads and the county highway building.

CALVERT Is there any question that you could ask? I have kind of hit the high spots of this thing.

CRAWFORD Yes, sir. Can you tell us something about your relations with the state highway department? I know you had contact with them before you started with TVA, and I'd like to find out something about your work with them, how closely you were able to work with them, and what you managed to get done.

CALVERT Of all the seven states that we worked with, most of the TVA involvement has been in Tennessee. I guess the TVA was fortunate, and I inherited some of the good relations that were started by Neil Bass, who was Dr. Harcourt Morgan's administrative assistant and had been Commissioner of Highways in Tennessee in the late 20's, I believe, and Frank Webster, who had had the job that I had for the last fifteen or more years. Mr. Webster left the Highway Department in 1934 or '35

as the Commissioner of Highways and came and set up some of the early programs. He was, of course, known all over the United States in the highway planning and engineering fields. When we started out I went with him to lots of these places, and he was highly respected by the highway organizations and knew all of the top people in the state highway organizations, and he was the kind of a fellow that everyone believed in, as I said before. He had this very strict personal code of honesty of what is right and what is wrong, and that was recognized by the highway people in the early days that Frank Webster wasn't going to trick them or do them in on anything.

Of course, in getting acquainted with these people, I've known many of the highway people in seven states, not much in Georgia, because we only had very, very little work in Georgia, but particularly in Kentucky, Alabama, Tennessee, and Mississippi, although it's been many years since we have had work in Mississippi and I'm not acquainted with the current Mississippi people. We had relations with Mississippi over a number of years, and of course Mr. Webster in the earlier days knew them. Apparently they had a good opinion of our engineering abilities and also our attitude of fair play, and we just never had any trouble in dealing with the highway organizations. They have done a good job, I think, looking after their own interests, but as far as any animosities or any dogmas or personal clashes or anything like that, they just never did any of these. Of course, when we have problems in one of the states, we have numerous meetings with the top engineer and management people with the highway organizations in the various states, and the dealings have been very pleasant and from my standpoint have been the most interesting part of

the engineering work that I've done in TVA--working with these local people, in the counties as well as the states. The states are quite different than working for the counties.

Most of the counties don't have engineering personnel, nor are they as competent to undertake things as complicated as we were getting into, but surprisingly the valley states have had some very able engineering people. With the salaries that they, certainly up until recent years, have paid, you sometimes wonder how they kept the character of the abilities that they had. But our dealings with them have been certainly from my standpoint, most pleasant and cooperative. I think we've cooperated with them. We certainly have tried to, and they have been most cooperative with us on any problems we have had. You call them up in a hurry. You want an answer, and they would quit what they were doing and send you their maps. Of course, we'd get calls from them too, and we always would get right on it and try to answer their problems and their questions, and we furnished them maps and all sorts of data.

The highway engineering profession in general, in the valley states (I guess anywhere) wasn't entirely cognizant to the problems we would have building roads in reservoirs. Some roads were going to have water 40 or 50 feet deep around the sides of them, and I think we have had to sort of lead the way and be responsible, certainly of the detailed engineering specifications that you had to have to build a highway or a railroad under those conditions surrounded by deep water, and have it remain stable and useful and relatively maintenance free, and that sort of thing. They trust us on that and I think we've lived up to it.

We usually would start out in a project with, say, a state highway department. We'd call on the telephone either the commissioner or his counterpart, or the chief engineer, which has different titles. Some places it's state highway engineers, sometimes they're directors, but the equivalent of what you would expect. We would tell them that we wanted to come over and talk to them and explain to them what we were up against, and so we'd get their people together and sometimes all our dealings have been in the office of the highway departments of the various states.

Sometimes they would delegate that responsibility to a division or regional engineer in the area that we were working, particularly perhaps in recent years, the last fifteen or twenty, because we were acquainted with the local engineering management personnel in the areas and had had contacts with them, and sometimes they would delegate most of this dealing to the local people. Sometimes we handled it, even with the commissioner, who's the governor's appointee, to head the highway organization. But as I perhaps said before, we explained first what the effect on these roads would be, and developed maps. Get a big map and show the existing road patterns and show in blue or some color what was going to be water and also the land we were going to buy, as near as we could get it, the purchased boundaries, and leave that with them so they could be studying about it. And at the next meeting we'd probably come up with a suggested relocation system and work on from that. We haven't ever tried to set up in TVA traffic data determination and projecting traffic, because the states and BPR have expert staffs who work on this full time.

The states, I think beginning in 1937, had a Congressional Act where they were going to be able to use federal aid money to finance a Division of Research and Planning (most of them called it) and the federal government paid half of it and the states paid half of it. But it was mostly the state's responsibility, and in any state the Federal Highway Administration set up a small unit to work with them on federal aid projects. And through these people we were acquainted with the Federal Bureau of Roads, the Public Roads Administration people that were assigned to each state. And sometimes, in these earlier meetings, we would have the Bureau of the Roads people interested and they would be there too, although our contacts legally are entirely with the State Highway Department. The formal contracts were usually signed, I guess, by our general manager (maybe some of the earlier ones by the chairman of the board); then to the general manager and commissioner, and attorneys general of the various states.

The agreements we finally worked out were negotiated in the truest sense of the word in letting everybody put his ideas into it, and as I say, to particularly, certainly in modern times, roads, locations and design are based on anticipated traffic, and they furnished us traffic as a matter of fact, on county roads where the state people had no responsibility. They would use their skilled people and their people who handled the counting of existing traffic, and the projections and anticipations of what traffic needs were going to be. We would always get that information from them, and in developing our plans there was never much of a difference of opinion or argument about what costs would be, because we, of course, could keep up with our costs very closely. Also

the state does most of their work by contract and can make very close cost estimates.

The American Road Builders Association at every bid opening compiles a detailed breakdown of all the bid prices of the various items that go in to build a road, and those were available to us. We never had any arguments to amount to anything about estimating the costs of the various alternatives and that sort of thing, and of course what we were working toward eventually, if they were going to participate and improve standards, was what it was going to cost them. We had never had any trouble with the railroads. Some of the top railroad management, I think, is basically allergic to the TVA ideology, and that was a stumbling block a little bit sometimes. But in working with the chief engineer and the engineering personnel that we had to work with the railroads, we had very pleasant relations with them also.

CRAWFORD Engineers speak sort of the same language, don't they?

CALVERT Yes, and they're pretty good appraisers of human nature and ability, and they can figure out pretty quickly whether you were a four-flusher or whether you knew what you were talking about, and I think we've had competent engineering personnel, and they have too. When you have competent engineers, why there isn't any great problem of arriving at an engineering solution. As I say, there have been a few instances of mighty slow movement because of some of the top management of some railroads, but that has never really upset anything at the local level, at least at which I work. The biggest railroad jobs that we have had in TVA since 1950 have been the rail facilities to bring coal into the coal-fired steam plants. We have as much as twenty-five or thirty

miles of railroad tracks serving some of the coal-fired steam plants and of course, you've got to work that out with the railroad, because until we get the coal, the railroad is handling it. I think we've been very successful in working out an adequate solution to that.

The railroad that brings the coal into the Bull Run Steam Plant is very, very interesting, in that it's a forerunner of what's common now and what they call a unit train. We started talking in 1950 of trying to use unit train instead of a mixed train bringing the coal to us, leaving some cars at the steam plant; the unit train is made up entirely of coal cars consigned to one location. So the first time at the Bull Run Steam Plant, we brought this whole coal train in. It was weighed and sampled in motion. Each train was anticipated to have about 7200 tons of coal on it. That was just a little bit less than one full-day burn at the maximum capacity. If we'd run the Bull Run turbine generators at their maximum capacity, they'd burn a little more than 7200 tons a day. And to get the freight rates that our top management had agreed on, we had to have that train in there to leave in two hours, and actually we'd been getting them out quicker than this. With the old system of coal deliveries to a steam plant, you have your demurrage on your cars and you bring them in and store them, and then they are dumped and hauled back, and you would have as much as five or six hundred coal cars on a project at one time. That, of course, cost somebody money by requiring many more coal cars and the time involved. It cost time for the railroad crews, and this unit train idea was a quick turn-around. These cars from the mine were ticketed especially to Bull Run. We've got it at some of the other plants now. One crew would bring them in and they would have

have them back to the mine in one shift. They would bring the loads to the plant and take empties back to the mine without ever getting into overtime or anything like that. Also, of course, one of the big cost savings is the reduction in the number of cars that you have to have to do a thing like that; another is the length of track required to handle the cars at the plant is very greatly reduced.

CRAWFORD Who developed that idea, and how has it worked?

CALVERT One of the vice presidents of the railroad and one of our people, whose name is Kampmeier, was assistant to manager of power. You'll want to talk to him, incidentally.

CRAWFORD R. A. Kampmeier. I've talked with him.

CALVERT You have? A very able person. This had never been done at steam plants, but they made a agreement that that's the way they were going to do it, and that's the way we in engineering got hold of it--both the railroad engineers and the TVA engineers got hold of it; that this was what we were going to do. Well, of course you had to get something like that worked out, but we did.

CRAWFORD You developed a new kind of coal car, I suppose?

CALVERT Well, that was done by the railroad, with some assistance from some of our mechanical people that I wasn't directly involved in since I was a civil engineer. It was done by some of our people, but basically with the railroad and the Pullman Company that makes cars and the major manufacturers--the scale people. You see, before the

weighing of the coal for freight and also to pay for the coal, you had regulations for scales. The cars had to be uncoupled and stopped on that scale in order to get an acceptable weight, which I've forgotten--less than 1% error or something like that in weight--which we had to work out with the scale people. And the owners of the coal and the freight for the railroads--all that had to be worked out to get an acceptable technique of weighing a coal car that was still coupled up and moving at two or three miles an hour over that scale.

CRAWFORD How was that done now--to weigh one while moving?

CALVERT Well, I can't explain it, but we designed it in coordination with the railroad companies, and the scale manufacturers. No one had ever done it that way. Prior to Bull Run the railroad brought the coal in to what we called an interchange yard that was out near the railhead connection to the main line. We had our own engine and crew and they'd haul it in to what we called a loaded storage yard, and then we would weigh it and sample it and push it through the dumpers. These were those rotary dumpers which took a car and turned it upside down. Some of them would take two at a time and turn them upside down and drop the coal out and set them back down on the track, and then they'll coast them down into what we call the storage yard for the empty cars. And then when they got around to it, you'd haul those empties back out to the main line, and the railroad would pick them up and take them off. They had some unit trains in the iron mines up in Messabi Range, in and around the Great Lakes but their requirements of weighing and that sort of thing were not like ours would have to be, but I wouldn't think there would ever be another coal-fired steam plant that would receive coal like our Kingston Plant and a lot of the others. In fact, we have made certain modifications to get these

to handle coal cars faster than the generally accepted way.

CRAWFORD Well, you had a tremendous daily burn of coal, didn't you, in all the plants together?

CALVERT Yes. Well, the last few years TVA has been burning in excess of thirty million tons of coal a year. If you divide that by 365, you see that that's a lot of coal per day. The Kingston Plant, when it's running at full capacity, will burn about 15,000 tons of coal a day. And of course the capacity of the railroad cars has been increased. Now it's pretty standard that a railroad coal car would hold 100 tons (at least 70 tons). All through the 1950s the average railroad car that was hauling the coal held 50 tons, so it took a lot more cars. More space was required to handle them. Besides lengthwise of a 100-ton car, it was only maybe 20% longer than a 50-ton car, so the techniques of handling them--there have been great changes in it, which I think will continue. Now it was some our idea, as well as the railroad people's and others, but the simple answer to your "Who started this business of this unit train at Bull Run," was Kampmeier and an official of the L & N Railroad who said that was the way he was going to do it. We didn't know how it was going to be done and immediately got in touch with the chief engineer at L & N Railroad in Louisville, and went there, and he didn't know how it was going to be done either. It was news to him!

CRAWFORD But you had the details worked out, didn't you?

CALVERT We worked it out between us to where this novel plan worked. I haven't heard about it in the last few years, but we've

had some bugs in it, naturally.

CRAWFORD Well, TVA should have been able to get along well with the railroads in the area. You were certainly one of their larger customers.

CALVERT Yes, some of the older ones, though, in the earlier days of TVA steam plants, some of the railroads said they weren't much interested in it. They had all the business they could take care of as it was.

CRAWFORD In the thirties they weren't that over-supplied with business.

CALVERT No, but in the fifties, why there were some of their officials that told us that their management people weren't too interested in it. I don't think they really believed it when we told them that we wanted seven or eight or ten thousand tons of coal a day, that they doubted that we knew what we were talking about. Ten thousand tons of coal a day, when you start talking about it, is 200 carloads of coal a day, and in that time the average length of a train was about fifty cars, so that was four trainloads of coal a day. I had the feeling that they didn't believe, some of them, that we were going to even do anything like that.

CRAWFORD You were giving them what was a big order, then?

CALVERT That's right, but the management in engineering of the railroad that we've dealt with, particularly in the last fifteen years, have been cooperative and understanding and a little different breed from the railroads of thirty or forty years ago.

CRAWFORD Do you feel, then, that there has been an improvement in the relations between TVA and business in the area over the time

you've been with TVA?

CALVERT I think so. Of course, most of the business people that I've had any contact with were pro-TVA. But acceptance of TVA has been slower in this East Tennessee area. The people here were apparently antagonistic to the basic TVA idea at first, but the rest of the Valley has been very, very cooperative.

CRAWFORD Did it seem strange to you that TVA headquarters would be established in the very part of the Valley where there was most of the opposition to TVA?

CALVERT I've heard a lot about that from friends in Northern Alabama and Middle Tennessee. It was started here because within a range of 50-75 miles, I guess, of Knoxville, you've got some big steam plants and many of the major dams, the flood control dams. The real big dams, as far as storing the heavy volume of water, are within this region, naturally, due to the topography and that sort of thing. So this would be the logical place, at least in the beginning, to have the headquarters.

CRAWFORD You've seen Tennessee over a long period of time, before TVA came and after. What changes have you noticed that TVA has brought to the region?

CALVERT The biggest change (maybe that's not the field of an engineer, and a personal opinion) has been when TVA came here, there was a depressed feeling--a feeling of hopelessness that nothing could be done. We were mostly a rural area, and the Depression that was supposed to have started in 1929, in the rural areas started a whole lot sooner than that. The prices you got for your produce were very small and the prices you

paid for the things you had to have were high. The rural areas were going down, but there was an obvious feeling of hope that we were going to come out of this thing when TVA came in, which somebody else would have to tell you why that pervaded the area. But with my acquaintance with Tennessee, that was the most noticeable thing that happened in the early part of TVA.

Another interesting thing, from my farmboy background, was the fact that the universities in the area, the land grant colleges that had the divisions of extension, had been working to get the area out of the corn, cotton and hog economy and into something that would save the land and also would bring more funds into the rural areas like cattle and grazing and hay, and that sort of thing, without much success. Maury County was one of the first counties in Tennessee to take advantage of this division of extension that started back in the middle teens somewhere to have county agents. And we had one of the first ones in the state, and with roads being what they were then, you didn't work out of the county seat right quickly in those days, and any county agents stayed at our home when working in our end of the county. My father happened to be a little of a modernist on it, though; we never grew cotton and he took some of these ideas, and our farm was used as a demonstration farm. Community farmers would meet there on Saturday afternoons with the men from the extension, and the county agents would show what is best in cultivation and fertilization, and all that sort of thing in the afternoon out in the fields and that sort of thing, but it didn't take hold.

It was somewhat of an obsession with Dr. H. A. Morgan. If you'll go back into his speeches and papers of this change of agriculture, he used to say, "If we'd get out of carbohydrates into proteins that it would be good for the land and be good for the people;" that carbohydrate

diets were, according to him, "one of the bad things of our rural southland." But the extension services handled through the universities were not making much of a headway on that.

Well, when TVA came in, I guess they put a little money into that. That I don't know. But with the zeal and the new ideas of "here's something new that's going to do something for us," that took hold. From traveling over the state, particularly Middle Tennessee to the university when I was going here to school, and traveling back and forth from this area to my homeland and around over the state in TVA's business, one of the most noticable things that happened was the change in the agriculture techniques all over the state and the community organizations. Just why that took such a jump in TVA, while it didn't catch on before, in fact, there was a good deal of argument. I don't know whether it was up on the board level or not, but among people I associated with in TVA, that they didn't want to even direct this agricultural program through these divisions of extension: the county agents, the universities, because they had been doing it since 1916 we'll say, somewhere back there. Here was 1933 when they had made very little headway, so let's us get our people in here and we'll ignore them.

Well, TVA's decision was to assist in the agricultural phase of this, which, of course, was very much in the picture because of the nitrate plant at Muscle Shoals. We were going to experiment with fertilizers there, but the decision was made that we were going to work at it through the land grant universities. Well, just why the TVA people working in that same channel were able to change the picture of the state. One thing I used to comment on was you'd see these scrub cows around on

the land where they had cattle, but in a few years, why, they got to having a much better quality of animals and more of them. The steep hillside fields, instead of having corn on them or these fields in the southern area of the state--Middle and West Tennessee--places that had been cotton fields from all of my memory--turned into pastures. And just why that sudden change from, say, 1933 or '34, on up to '39, it was quite revolutionary.

I have an article somewhere by Louis Bromfield, who was an author from somewhere up in Indiana or somewhere up in there, you probably know of him, and he was against the idea of TVA. But he said that he could fly over Tennessee Valley (that is written sometimes in the late '30s, I'll say) and tell when he got to boundary of the Tennessee Valley as compared to the adjacent rural areas in the southland by the fact that it was green. The erosion was being controlled, efforts were being made to control it, and that while he didn't go with the idea of TVA in the power business, that he thought that that would be the thing the historians would say, that the greatest impact that TVA had on the region was the change of the use of the rural land. I know I've observed it many years since, and while I don't know exactly what I would say today, I used to tell people or visitors that I thought the historian would say that the biggest change that TVA brought into this area was not necessarily the big engineering masterpieces, perhaps, or the engineering ideas of flood control and navigation that I was involved in, but the change of the attitude of the people and the change of the use of the land. If I had thought about it yesterday I would have tried to get this Bromfield article and brought it to you.

CRAWFORD And you have seen this change take place?

CALVERT Very much change. Now, certainly while I'm a rather pro-TVAer, some of this would have occurred had TVA not come, I'm sure. I don't think TVA can take 100 percent credit for it, but it is quite obvious, I think, to anyone who noticed these things at that time of the importance that TVA gave to these programs which were not particularly new, but how they became accentuated due to TVA pushing them.

CRAWFORD TVA worked, of course, through existing agencies.

CALVERT That's right. That was a big decision in early TVA. Of course, I wasn't involved in it, but I heard a lot about it in talking with others that we were involved in--certainly in the early days. I was involved with the roads, and the roads affected everybody and are much more noticeable to a lot of the people in the areas than the dams and that sort of thing. They hardly understood that, but the saying is, there may be a lot of famous roads in the world: the Appian Way, and 42nd Street, and Broadway, and all those things--Canal Street (New Orleans) is the widest one, but the most important one is the one that goes by my house.

And I have had the opportunity, by having to get out and make these studies all over the reservoir, to talk to a lot of people and get the attitudes and see the changes in their thinking of farming, and that certainly was one of the biggest changes (to me) that I noticed in the Tennessee Valley in its early days, a change in the attitude of the people from almost, you might say, despair to hope and the effect that the TVA programs of forestry and agriculture and fertilization and rural electrification were having on the farms of Tennessee. Of course at that

time I guess Tennessee was 70 or 80 percent rural.

CRAWFORD What about your relations with management? Were you able always to maintain the contact that you wanted with TVA management to work with them all?

CALVERT Yes, I suspect that more than most people who had the title as head civil engineer or head engineer(I had that same position in other phases of activity), that due to the dealing with the local people and the roads that were involved with all the other organizations in TVA--in land buying and planning and all that sort of thing--that I may have been having an opportunity to participate in meetings with the top management, maybe more than some people that, say, had a similar responsibility on some other phase of the TVA engineering program. It just so happened that I was personally acquainted with Dr. H. A. Morgan, and Red Wagner has been a close friend of mine, and I haven't been used (don't misunderstand me) to toss names around or anything like that.

CRAWFORD Well, the closeness of your working relationship is important in getting something done.

CALVERT Oh, yes, and there was personal satisfaction of doing these. Of course, when we'd go into one of these areas and come up with a program which might involve, oh, several million dollars of TVA's money on highways and railroads, why that program that we developed was submitted through channels and sometimes was even explained in the real top-level management. I always wanted to find out where I stood before I started making promises to spend millions of dollars. I was going to be sure that my ideas of this were agreeable and followed the same ideas

of the top management of the TVA. And that has been a considerable personal satisfaction that I have known most of the real top people in TVA, having been able as a young fellow to sit in. I learned a lot in meetings with the people of the experience that many of our people that did have some responsibility for what I was doing had a say-so in, and could get the benefit of their thinking.

CRAWFORD Over the years of TVA's experience, Mr. Calvert, the Authority has been successful, I think nearly everyone would agree, in keeping very friendly relations with state and county government in the area. Why do you think that has happened?

CALVERT Well, I think basically from the very beginning it was recognized by the top management that in order for TVA to be successful, it had to have the backing of the state officials, the counties and the individuals. To develop TVA with the same policies that some of the power companies, for instance, had used, I think we would have been kicked out in a fairly short time. I think one of the reasons you have a TVA is because some of the policies of others in the power business before TVA had certainly alienated the public as well as some of the officials in the various levels of government. You've asked me a question that I never heard anybody exactly come out in the board and say as a dictum, that this is what we're going to do, but I'm sure that they recognized that you had to have the support of the people in order for TVA, in its broad scope of responsibility, to have any success. They had to have the cooperation of most of the people and certainly of the governing agencies in the counties and cities and states. You certainly couldn't antagonize them, and since we were working through

and asking them to do a whole lot of things, you certainly wouldn't antagonize them and expect to accomplish what we were set up to accomplish. And certainly not in my work, but in other things that you learn through working with people as a form of federal government in the lives of the people--has been the TVA working for the people and working with them and not sending out a bunch of dictatorial statements that you do this and you do that. We worked with them and in general, even in the roads and that sort of thing, to try to get them to do all they can on their own.

This erosion that we spoke of earlier, why we started out, as I say, trying to use design and construction methods that would minimize the erosion that was caused by scarring up the landscape by building a road, and for many, many years we were the only people in the Valley to plant grass on the slopes that we left after we built the road. All these things, even maybe as much or more than we would have given to it, would be given to these things when a road is being planned today, certainly when it's being constructed. We've tried to lead the people in these things and some of the few things in engineering in respect to roads or railroads, I think we've been able to help some of the local engineering organizations to subscribe to some new ideas.

CRAWFORD This is a personal question, but why were you able to work as effectively as you were with all the local people and state officials you had to meet?

CALVERT Some of it probably, as I've said earlier, was due to the background of Neil Bass and Frank Webster who had been highly known--not politicians, but competent civil engineers--and had headed the highway department in Tennessee and were well acquainted with their

counterparts in the other states. And the way that we have always approached them is not to come in a authoritative or autocratic way, but to work with them on their level and not give the impression, even in the poorer counties, of talking down to them or ignoring their feelings. We would explain to them what we were doing and try to conduct all our meetings in a very harmonious way and try not to evade any question that they would ask us; to be as frank and as open and honest as we could possibly be in initiating our dealings with them. And of course a lot of the areas we dealt with, since I've had that responsibility, have been repetitive of going back in the early days of TVA, and certainly Frank Webster and Neil Bass and Harcourt Morgan had the confidence and respect of a rather wide range of people in the Valley. And maybe I inherited some good opportunities, good backgrounds, when I got into it, certainly as following along as an assistant when I went with these other people. I hope I learned how to handle these things smoothly and frankly and without developing antagonisms or animosities on the other side.

CRAWFORD When did you retire from TVA, Mr. Calvert, and had your work changed in any way in particular by that time?

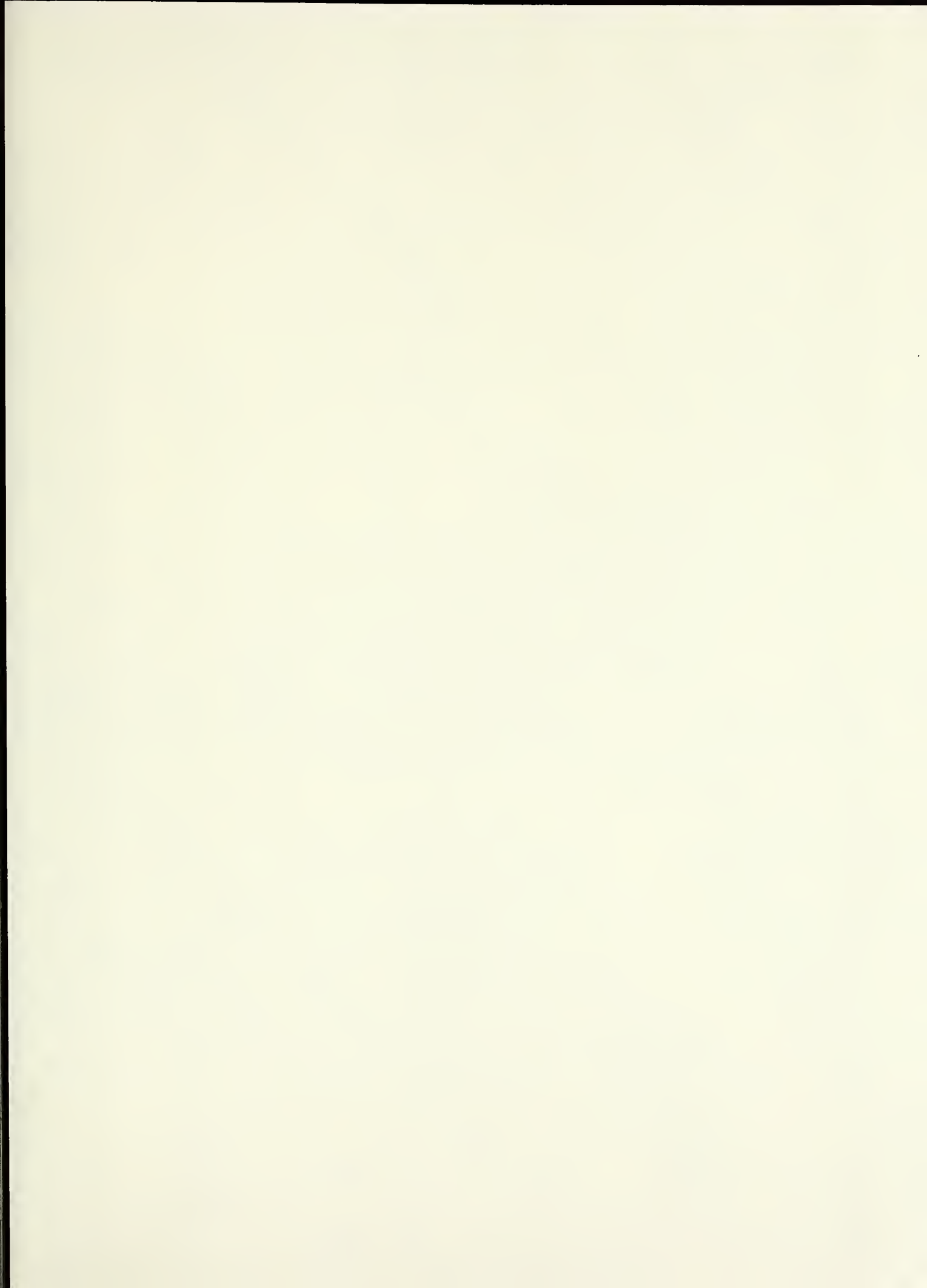
CALVERT I retired May 31, 1971, about four months before I would have had to go at age 65. Well, since in the 1940s...Well, let's go back earlier than that. The first two dams the TVA built, Norris and Wheeler, were designed by the Bureau of Reclamation in Denver, Colorado, and at that time our organization here was purely highway and railroad. Beginning about 1941 (well, before that) when they organized the main engineering and some of the other organizations in TVA after the Wheeler Dam era, we were moving into Knoxville. And they moved us, which was the only large organization TVA had in the very beginning--an engineering

organization, because that's all we did was highways and railroads. The dams were being designed in Denver, and they moved the design organization in here, and to make room for them, moved us to Chattanooga. We operated pretty much as a highway and railroad organization while we were here in Chattanooga.

They moved us back up here at the beginning of World War II, and in coordination of the various engineering functions, why gradually the group that I supervised got to doing a lot of other things besides highways and railroads. Around the development of the dam--occasionally in a jam, we worked on the concrete design of the power houses or whatever else the TVA was in a jam on--we worked with that. And as we came on to the steam plants, more and more of the site planning and site development was turned over to us.

As we started out on development of a project, we made a lot of the site studies and then when you get into a steam plant, for instance, which we did in 1949 or '50, you've got a very large area of many areas of grading and drainage and various kinds of development on it. I presume they decided, with our experience of grading and drainage and the planning of that nature, that devolved upon my group. We had, for instance, the ash disposal ponds, the coal yards. Railroad facilities had become so important, so vital as far as the economics of handling the operating of steam plants, that it affects many of the other auxiliaries that are in the area of the plant. And I guess it was probably the last fifteen years that half of the time at least that I have put in, or my unit in TVA has been spent, has not been on highways and railroads, it's been on other facilities. I treasure very much the opportunity I've had, which I can say I've seen every project that TVA started from a minor visitor building to a major plant. I've seen the area before anything was done, I've seen

it during construction, I've seen every one when it was finished. I've had something to do, even in a small way, in the engineering of everything that we have done, even other than roads.





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